

**Specification for
Asphaltic Emulsion Inductive Loop Sealant,
8040-41A-15**

1.0 SCOPE

This specification covers a one component; pourable sand filled, asphaltic emulsion for use in sealing inductive wire loops and leads imbedded in asphalt and portland cement concrete. This sealant is suitable for use in freeze-thaw environments.

2.0 APPLICABLE SPECIFICATIONS

The following specifications, test methods and standards in effect on the opening date of the Invitation to Bid form a part of this specification where referenced:

American Society for Testing and Materials (ASTM) Designations: D2939 and D2523

California Test Method, CT 434

California Department of Transportation Standard Specifications, latest revision

State of California Specification 8010-XXX-99 Inspection, Testing and Other Requirements for Protective Coatings

Code of Federal Regulations, Hazardous Materials and Regulations Board, Ref. 49CFR.

3.0 REQUIREMENTS

3.1 COMPOSITION

The composition of the loop sealant shall be a sand filled, water emulsified bitumen. Sealant should have a viscosity that would allow it to be poured into a ¼ inch sawn slot. It will be the manufacturer's responsibility to produce a one-component product to meet the properties specified herein.

3.2 CHARACTERISTICS OF THE SEALANT

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|-------|---|------------|
| 3.2.1 | Residue by evaporation, weight percent
Use ASTM Designation: D2939 | 70 Minimum |
| 3.2.2 | Ash content, weight percent
Use ASTM Designation: D2939 except calculate ash as a percentage of the sealant as received. | 50 to 65 |

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3.2.3	Firm set time, hours, test at one hour intervals, use ASTM Designation: D2939	4 Maximum
3.2.4	Brookfield viscosity, Poise, RVT Spindle #3 or 4, 10 RPM at $25 \pm 2^{\circ}\text{C}$. Let sample set undisturbed for at least one hour. Immediately prior to testing, stir sample with a spatula for 30 seconds.	50 to 150
3.3	Properties of the Dried Film	
3.3.1	Flexibility, Use ASTM Designation: D2939, except air-dry specimens to constant weight at $25 \pm 2^{\circ}\text{C}$ and $50 \pm 10\%$ relative humidity. Condition mandrel and specimens 2 hours at 25°C before test. Use aluminum panels, 0.03 inches thick (Q panel or equal).	No full depth cracks
3.3.2	Tensile Strength, psi, Cast sheets 0.25 inches thick and air dry at $25 \pm 2^{\circ}\text{C}$, $50 \pm 10\%$ relative humidity for a minimum of 16 hours. Test at a crosshead speed of 0.05 inches/minute, use ASTM Designation: D2523.	20 Minimum
3.3.3	Elongation, % Same conditions as 3.3.2, use ASTM Designation: D2523	2.0 Minimum
3.3.4	Slant-shear strength to concrete, psi, minimum Use CT 434 with the following exceptions. Space damp blocks with 0.25 inches between slant faces, seal sides and bottom with tape and fill with well-stirred sample, strike off the excess. Let dry for 5 days at $25 \pm 2^{\circ}\text{C}$ then two days at 60°C . Condition 1 day at $25 \pm 2^{\circ}\text{C}$ before testing. Sealant should meet the minimum strength with no loss of adhesion to the concrete blocks.	>150
3.3.5	Resistance to water, Use ASTM Designation: D2939, Alternative B	No blistering, re-emulsification or loss of adhesion
3.4	WORKMANSHIP	
3.4.1	The sealant shall be properly dispersed and any settling shall be easily redispersed with minimum resistance to the sidewise manual motion of a paddle across the bottom of the container. It shall form a smooth uniform product of the proper consistency. If the material cannot be easily redispersed due to excessive settlement as described above or due to any other cause, the sealant shall be considered unfit for use.	

The sealant shall retain all specified properties under normal storage

conditions for 12 months after date of manufacture.

The sealant shall comply with all air pollution control rules and regulations within the State of California in effect at the time the sealant is manufactured.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Inspection

This material shall be inspected and tested in accordance with State of California Specification 8010-XXX-99, or as otherwise deemed necessary.

4.2 Sampling and Testing

Unless otherwise permitted by the Engineer, the material shall be sampled at the place of manufacture and application will not be permitted until the material has been approved by the Engineer.

5.0 PREPARATION FOR DELIVERY

5.1 Packaging

The sealant shall be prepared in a one-package system ready for application. If ordered in 5-gallon size, the containers shall be new, round, standard full open head with bails, shall be non-reactive with the contents, and shall have compatible gaskets. The containers shall comply with the U. S. Department of Transportation or the Interstate Commerce Commission regulations, as applicable.

5.2 Marking

All containers of material shall be labeled showing State specification number, manufacturer's name, date of manufacture and manufacturer's batch number.

The manufacturer shall be responsible for proper shipping labels as outlined in Code of Federal Regulations, Hazardous Materials and Regulations Board, Reference 49CFR.

6.0 NOTES

6.1 Directions for Use

Saw cuts shall be blown clean with compressed air to remove excess

water and debris. The sealant must be thoroughly stirred before use and hand poured into the slots. Due to the sand content of this material, pumping is not recommended. Any clean up of road surface or tools can be done with water, before the sealant sets.

6.2 Patents

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to identify and save the State of California, and its duly authorized representatives, from all suits at law or action of every nature for, or on account of, the use of any patented materials, equipment, devices or processes.

6.3 Certificate of Compliance

The manufacturer shall furnish a Certificate of Compliance with each batch of sealant, in accordance with the provision of Section 6-1.07 of California Department of Transportation Standard Specifications, latest revision.